

# Best Available Copy

4,413,331 367/85

4,574,632 181/89  
116/137R

30 JUL 87 16:13:16

U.S. Patent & Trademark Office

P0003

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(FILE USPAT)

SET PAGELength 19

SET LINELENGTH 78

L1 69 S HIPPE?

L2 3 S L1 AND (ACOUSTIC? OR SONIC?)

=> d 12 1-3

1. 4,617,796, Oct. 21, 1986, Sleeve valve for a pulsed gas generator; Janet S. Knapp, et al., 60\*39.79, 247

2. 4,564,841, Jan. 14, 1986, Navigational systems using phase encoded angular coordinates; Norman S. Neidell, 342\*386, 453; 367\*13, 150, 151 [IMAGE AVAILABLE]

16:14:26

30 JUL 87 16:14:29

U.S. Patent & Trademark Office

P0004



=> d 12 1-3 fro

4,617,796 Oct. 21, 1986 L2: 1 of 3  
Sleeve valve for a pulsed gas generator

INVENTOR: Janet S. Knapp, Simi Valley, CA  
Jerry L. Hillman, Langlois, OR  
ASSIGNEE: Rockwell International Corporation, El Segundo, CA (U.S.  
corp.)  
APPL-NO: 6/713,209  
DATE FILED: Mar. 18, 1985  
INT-CL: [4] F02K 7\*06

16:15:20  
30 JUL 87 16:15:25 U.S. Patent & Trademark Office P0005

4,617,796 Oct. 21, 1986 L2: 1 of 3  
Sleeve valve for a pulsed gas generator

US-CL-ISSUED: 60\*39.79, 247  
US-CL-CURRENT: 60\*39.79, 247  
SEARCH-FLD: 60\*233, 39.76, 39.77, 39.78, 39.79, 39.8, 39.81, 247, 248,  
249, 221, 222

REF-CITED:

U.S. PATENT DOCUMENTS

2,714,800	8/1955	Gongwer	60*221
3,060,682	10/1962	Kemenczky	60*247
3,264,824	8/1966	Bost	60*247
3,279,178	10/1966	Kemenczky	60*221
4,258,546	3/1981	Stratton	60*259

PRIM-EXMR: Louis J. Casaregola  
LEGAL-REP: H. Fredrick Hamann, Harry B. Field, Lawrence N. Ginsberg

16:15:25  
30 JUL 87 16:15:35 U.S. Patent & Trademark Office P0006

4,617,796 Oct. 21, 1986 L2: 1 of 3  
Sleeve valve for a pulsed gas generator

ABSTRACT:

The combination of a pulsed rocket engine 12 and a sleeve valve 10 coupled to the engine output and receiving in its internal chamber 16 the gas generated by the engine 12. The sleeve valve 10 has a movable sleeve 24 with ports 26, 28 therethrough surrounding the wall 18 of the chamber 16, the wall 18 having ports 38, 40 which axially align with the sleeve ports 26, 28 in the valve's open position to allow rapid discharge of the contents of the chamber 16. The sleeve is ordinarily biased to a closed, or non-aligned, position for the ports by a spring 32. When the gas pressure in the chamber 16 reaches a predetermined amount, a pressure sensor 54 commands a gas source to send pressurized gas into the valve 10 to force the sleeve 24 into its open position against the bias of the spring 32, thereby aligning the ports 26, 28

16:15:35  
30 JUL 87 16:15:46 U.S. Patent & Trademark Office P0007

4,617,796 Oct. 21, 1986 L2: 1 of 3  
Sleeve valve for a pulsed gas generator

and 38, 40 and allowing rapid discharge of the gas from the sleeve-valve chamber 16.

6 Claims, 1 Drawing Figures

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986 L2: 2 of 3  
Navigational systems using phase encoded angular coordinates

APPL-NO: Houston, TX 77024  
6/715,052  
DATE FILED: Mar. 22, 1985  
16:15:46  
30 JUL 87 16:15:54 U.S. Patent & Trademark Office P0008

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986 L2: 2 of 3  
Navigational systems using phase encoded angular coordinates

REL-US-DATA: Continuation of Ser. No. 225,410, Jan. 15, 1981, abandoned,  
which is a continuation-in-part of Ser. No. 76,695, Sep. 18,  
1979, Pat. No. 4,315,263, which is a continuation of Ser.  
No. 925,903, Jul. 19, 1978, which is a continuation-in-part  
of Ser. No. 691,674, Jun. 1, 1976, Pat. No. 4,114,153, Jun.  
12, 1978, which is a continuation of Ser. No. 483,202, Jul.  
26, 1974, abandoned.

INT-CL: [4] G01S 1\*08  
US-CL-ISSUED: 343\*386, 453; 367\*151, 13, 150  
US-CL-CURRENT: 342\*386, 453; 367\*13, 150, 151  
SEARCH-FLD: 343\*9R, 385, 386, 450, 451, 453, 786, 771; 367\*13, 150, 151;  
340\*850; 73\*64.3

16:15:54  
30 JUL 87 16:16:04 U.S. Patent & Trademark Office P0009

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986 L2: 2 of 3  
Navigational systems using phase encoded angular coordinates

REF-CITED:

U.S. PATENT DOCUMENTS

2,920,320	1/1960	Ross	343*453
3,430,234	2/1969	Wright	
3,534,399	10/1970	Hirsch	
3,829,860	8/1974	Cutler et al.	343*9
3,941,984	3/1976	Chappell et al.	
3,943,514	3/1976	Afendykiw et al.	343*453
4,028,699	6/1977	Stevens	343*9
4,207,523	6/1980	Acker	371*6
4,413,331	11/1983	Rowe, Jr. et al.	367*155

16:16:04  
30 JUL 87 16:16:14 U.S. Patent & Trademark Office P0010

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986 L2: 2 of 3  
Navigational systems using phase encoded angular coordinates

FOREIGN PATENT DOCUMENTS

690889	4/1953	United Kingdom	367*151
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OTHER PUBLICATIONS

K. E. Karwarth, Journal of the Institute of Navigation, vol. 24, No. 1, pp.  
105-120, Jan. 1, 1971.

PRIM-EXMR: Theodore M. Blum  
LEGAL-REP: Pravel, Gambrell, Hewitt & Kimball

ABSTRACT:

Navigational systems which position one or more mobile platforms in real time  
with appropriate accuracy in reference to a known system of coordinates by

16:16:14  
30 JUL 87 16:16:22 U.S. Patent & Trademark Office P0011

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986 L2: 2 of 3  
Navigational systems using phase encoded angular coordinates

the emission of signals into a propagation medium and processing them after  
detection are disclosed. Broad-band, broad-beam signals are employed. All

received signals convey phase encoded angular coordinate information which characterizes the particular signal path. Phase encoding of angular information is effected by suitably configured "lenses" of dispersive materials or by post-critical angle reflection from a suitably configured reflector and shield combination. When the angular coordinate information is used in conjunction with range determinations from detected signals, an especially useful navigation system is provided which can operate from a single reference station.

28 Claims, 13 Drawing Figures

16:16:22

30 JUL 87 16:16:32

U.S. Patent & Trademark Office

P0012

4,077,109 [IMAGE AVAILABLE] Mar. 7, 1978

L2: 3 of 3

Hot working of metal powders

INVENTOR: Jay Michael Larson, Warwick, NY

ASSIGNEE: The International Nickel Company, Inc., New York, NY (U.S. corp.)

APPL-NO: 5/684,479

DATE FILED: May 10, 1976

INT-CL: [2] B22F 3\*24

US-CL-ISSUED: 29\*420; 264\*111; 29\*421R, DIG.310

US-CL-CURRENT: 419\*49; 29\*421R, DIG.31; 228\*157

SEARCH-FLD: 75\*223, 214, 226; 29\*420, 421, 420.5; 264\*111, 121

REF-CITED:

U.S. PATENT DOCUMENTS

2,725,288 11/1955 Dodds et al.

75\*226

16:16:32

30 JUL 87 16:16:41

U.S. Patent & Trademark Office

P0013

4,077,109 [IMAGE AVAILABLE] Mar. 7, 1978

L2: 3 of 3

Hot working of metal powders

3,741,755 6/1973 Allen

29\*420

3,807,009 4/1974 Ostbo

29\*421R

3,895,436 7/1975 Summers et al.

29\*421R

PRIM-EXMR: E. M. Combs

ASST-EXMR: V. K. Rising

LEGAL-REF: George N. Ziegler, Ewan C. MacQueen

ABSTRACT:

Metal powders are hot isostatically pressed in a can or container produced from superplastic metal sheet.

4 Claims, 4 Drawing Figures

16:16:41

30 JUL 87 16:16:50

U.S. Patent & Trademark Office

P0014

=> s 11 and (367/clas or 181/clas)

10558 367/CLAS

12540 181/CLAS

L3 1 L1 AND (367/CLAS OR 181/CLAS)

=> d 13 fro

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986

L3: 1 of 1

Navigational systems using phase encoded angular coordinates

INVENTOR: Norman S. Neidell, 10497 Town & Country Way Suite 300, Houston, TX 77024

APPL-NO: 6/715,052

DATE FILED: Mar. 22, 1985

16:18:47

30 JUL 87 16:18:50

U.S. Patent & Trademark Office

P0015

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986

L3: 1 of 1

Navigational systems using phase encoded angular coordinates

REL-US-DATA: Continuation of Ser. No. 225,410, Jan. 15, 1981, abandoned, which is a continuation-in-part of Ser. No. 76,695, Sep. 18, 1979, Pat. No. 4,315,263, which is a continuation of Ser. No. 925,903, Jul. 19, 1978, which is a continuation-in-part of Ser. No. 691,674, Jun. 1, 1976, Pat. No. 4,114,153, Jun. 12, 1978, which is a continuation of Ser. No. 483,202, Jul. 26, 1974, abandoned.

INT-CL: [4] G01S 1\*08

US-CL-ISSUED: 343\*386, 453; 367\*151, 13, 150

US-CL-CURRENT: 342\*386, 453; ~~367\*13~~, ~~150~~, ~~151~~

SEARCH-FLD: 343\*9R, 385, 386, 450, 451, 453, 786, 771; 367\*13, 150, 151; 340\*850; 73\*64.3

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30 JUL 87 16:19:00

U.S. Patent & Trademark Office

P0016

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986

L3: 1 of 1

Navigational systems using phase encoded angular coordinates

#### REF-CITED:

##### U.S. PATENT DOCUMENTS

2,920,320	1/1960	Ross	343*453
3,430,234	2/1969	Wright	
3,534,399	10/1970	Hirsch	
3,829,860	8/1974	Cutler et al.	343*9
3,941,984	3/1976	Chappell et al.	
3,943,514	3/1976	Afendykiw et al.	343*453
4,028,699	6/1977	Stevens	343*9
4,207,523	6/1980	Acker	371*6
4,413,331	11/1983	Rowe, Jr. et al.	367*155

16:19:01

30 JUL 87 16:19:10

U.S. Patent & Trademark Office

P0017

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986

L3: 1 of 1

Navigational systems using phase encoded angular coordinates

##### FOREIGN PATENT DOCUMENTS

690889	4/1953	United Kingdom	367*151
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##### OTHER PUBLICATIONS

K. E. Karwarth, Journal of the Institute of Navigation, vol. 24, No. 1, pp. 105-120, Jan. 1, 1971.

PRIM-EXMR: Theodore M. Blum

LEGAL-REP: Pravel, Gambrell, Hewitt & Kimball

#### ABSTRACT:

Navigation systems which position one or more mobile platforms in real time with appropriate accuracy in reference to a known system of coordinates by

16:19:10

30 JUL 87 16:19:19

U.S. Patent & Trademark Office

P0018

4,564,841 [IMAGE AVAILABLE] Jan. 14, 1986

L3: 1 of 1

Navigational systems using phase encoded angular coordinates

the emission of signals into a propagation medium and processing them after detection are disclosed. Broad-band, broad-beam signals are employed. All received signals convey phase encoded angular coordinate information which characterizes the particular signal path. Phase encoding of angular information is effected by suitably configured "lenses" of dispersive materials or by post-critical angle reflection from a suitably configured reflector and shield combination. When the angular coordinate information is used in conjunction with range determinations from detected signals, an especially useful navigation system is provided which can operate from a single reference station.

28 Claims. 13 Drawing Figures

16:19:19

30 JUL 87 16:19:29

U.S. Patent & Trademark Office

P0019

=> s 11 and (sound? or noise?)

36067 SOUND?

56469 NOISE?

L4

5 L1 AND (SOUND? OR NOISE?)

=> d 14 1-5

1. 4,610,114, Sep. 9, 1986, Metal frame homes; Don R. Rodriguez, 52\*93, 90, 94, 648

2. 4,564,841, Jan. 14, 1986, Navigational systems using phase encoded angular coordinates; Norman S. Neidell, 342\*386, 453; 367\*13, 150, 151 [IMAGE AVAILABLE]

3. 4,437,287, Mar. 20, 1984, Ceiling panel; Thomas C. Halfaker, 52\*588, 145, 406

16:23:40

30 JUL 87 16:23:44

U.S. Patent & Trademark Office

P0020

4. 3,996,349, Dec. 7, 1976, Attractant compositions; Mir S. Mulla, et al., 424\*84

5. 3,975,690, Aug. 17, 1976, Planar transmission line comprising a material having negative differential conductivity; Paul L. Fleming, 330\*5, 53; 333\*246; 357\*3

=> s 11 ~~2000000~~ WATER? or underwater? or ocean? or marine?)

5229 UNDERWATER?

5221 OCEAN?

16:28:51 974 MARINE?

30 JUL 87 16:28:51

U.S. Patent & Trademark Office

P0021

L5

30 L1 AND (WATER? OR UNDERWATER? OR OCEAN? OR MARINE?)

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=> s rocket? and (181/clas or 367/clas)

3370 ROCKET?

12540 181/CLAS

10558 367/CLAS

L6

24 ROCKET? AND (181/CLAS OR 367/CLAS)

=> d 16 1-24

1. 4,653,032, Mar. 24, 1987, Arrangement for the determination of the direction and/or distance of objects by means of water-borne sound waves; Hans D. Schwarz, et al., **367\*113** [IMAGE AVAILABLE]

2. 4,574,632, Mar. 11, 1986, Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise; John H. Woolley, et al., 73\*571; 116\*137R; **181\*159**; 331\*155

16:31:15

30 JUL 87 16:31:17

U.S. Patent & Trademark Office

P0022

noise fields using low frequency excitation of aeroacoustic noise; John H. Woolley, et al., 73\*571; 116\*137R; **181\*159**; 331\*155

3. 4,462,483, Jul. 31, 1984, Solid propellant sound generator for coagulation of aerosols; Robert E. Betts, et al., **181\*142**; 116\*137R [IMAGE AVAILABLE]

4. 4,448,106, May 15, 1984, Method of identifying hard targets; Richard D. Knapp, 89\*1.11; 102\*501, 513; 342\*5; **367\*1** [IMAGE AVAILABLE]

5. 4,405,985, Sep. 20, 1983, Guidance computer; Eldon C. Hall, et al..

PULL

6. 4,372,239, Feb. 8, 1983, Undersea weapon with hydropulse system and periodical seawater admission; Allen C. Hagelberg, et al., 114\*20.2, 25; 367\*96, 133 [IMAGE AVAILABLE]

16:31:17

30 JUL 87 16:31:27

U.S. Patent & Trademark Office

P0023

7. 4,350,917, Sep. 21, 1982, Frequency-controlled scanning of ultrasonic beams; Frederic L. Lizzi, et al., 310\*320; 128\*660; 310\*335, 369; 333\*186; 367\*101, 103, 121, 157 [IMAGE AVAILABLE]

8. 4,349,898, Sep. 14, 1982, Sonic weapon system; William Drewes, et al., 367\*138; 89\*1.11; 367\*92, 95, 139 [IMAGE AVAILABLE]

9. 4,319,660, Mar. 16, 1982, Mechanical noise suppressor for small rocket motors; Charles R. Bishop, 181\*222, 258

10. 4,312,054, Jan. 19, 1982, Acoustic beacons; Bard Holand, 367\*134, 137, 142, 910 [IMAGE AVAILABLE]

11. 4,307,665, Dec. 29, 1981, Decoy rounds; Kenneth A. Block, et al., 102\*505; 89\*6.5; 102\*357; 149\*42; 342\*12; 367\*1 [IMAGE AVAILABLE]

16:31:28

30 JUL 87 16:31:37

U.S. Patent & Trademark Office

P0024

12. 4,305,142, Dec. 8, 1981, Ballistic impact sensing and display system; Barry R. Springer, 367\*127; 273\*372; 367\*906 [IMAGE AVAILABLE]

13. 4,257,224, Mar. 24, 1981, Method and apparatus for controlling the mixing of two fluids; Israel Wagnanski, et al., 60\*204, 749; 181\*220; 366\*108, 119; 417\*198

14. 4,221,004, Sep. 2, 1980, Adjustable ultrasonic level measurement device; Charles M. Combs, et al., 367\*114; 73\*290V; 367\*112, 137, 900, 902, 908 [IMAGE AVAILABLE]

15. 4,203,160, May 13, 1980, Submarine communication; John J. Doherty, 367\*2, 6, 132, 134 [IMAGE AVAILABLE]

16. 4,183,302, Jan. 15, 1980, Sequential burst system; George H. Schillreff, 16:31:37

30 JUL 87 16:31:48

U.S. Patent & Trademark Office

P0025

102\*377, 505; 342\*12; 367\*1 [IMAGE AVAILABLE]

17. 4,153,134, May 8, 1979, Underwater seismic source; Lien C. Yang, 181\*120, 115; 367\*142

24 3,903,988 181/142 116/137A

e christoff/inv

E1 3 CHRISTOFAS, ALKIS/INV  
E2 11 CHRISTOFER, DONALD E./INV  
E3 0 CHRISTOFF/INV  
E4 1 CHRISTOFF, CHRIS A./INV  
E5 1 CHRISTOFF, ELIZABETH/INV  
E6 1 CHRISTOFF, JAMES T./INV  
E7 1 CHRISTOFF, JAMES W./INV  
E8 2 CHRISTOFF, PAUL B./INV  
E9 2 CHRISTOFF, WILLIAM J./INV

16:38:06 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:38:16 U.S. Patent & Trademark Office

P0028

E10 1 CHRISTOFFEL, EDDIE W./INV  
E11 6 CHRISTOFFEL, JR., JULIUS M./INV  
E12 1 CHRISTOFFEL, REINHOLD/INV

=> s e9

L7 2 "CHRISTOFF, WILLIAM J."/INV

=> d 17 1-2

1. 4,514,976, May 7, 1985, Integrated auxiliary power and environmental control unit; **William J. Christoff**, 60\*39.07, 39.15, 39.183

2. 4,503,666, Mar. 12, 1985, Aircraft environmental control system with auxiliary power output; **William J. Christoff**, 60\*39.07, 39.183

=> d 17 1-2 fro

16:39:01 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:39:07 U.S. Patent & Trademark Office

P0029

4,514,976

May 7, 1985

L7: 1 of 2

Integrated auxiliary power and environmental control unit

INVENTOR: **William J. Christoff**, Thousand Oaks, CA  
ASSIGNEE: Rockwell International Corporation, El Segundo, CA (U.S. corp.)  
APPL-NO: 6/422,118  
DATE FILED: Sep. 23, 1982



abandoned.

INT-CL: [3] F02C 6\*08  
US-CL-ISSUED: 60\*39.07, 39.15, 39.183  
US-CL-CURRENT: 60\*39.07, 39.15, 39.183  
SEARCH-FLD: 60\*39.07, 39.142, 39.15, 39.183, 39.33; 98\*1.5  
REF-CITED:

U.S. PATENT DOCUMENTS

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30 JUL 87 16:39:17

U.S. Patent & Trademark Office

P0030

4,514,976

May 7, 1985

L7: 1 of 2

Integrated auxiliary power and environmental control unit

2,777,301	1/1957	Kuhn	62*178
3,101,926	8/1963	Weber	415*164
3,799,694	3/1974	Duzan	415*211
3,965,673	6/1976	Friedrich	60*39.15
4,091,613	5/1978	Young	60*39.07

PRIM-EXMR: Louis J. Casaregola

LEGAL-REP: H. Fredrick Hamann, Harry B. Field

ABSTRACT:

An integrated auxiliary power unit and environmental control unit for an airplane 2, said integrated unit 2 comprising a prime mover 4, a variable geometry compressor 22 operable selectably by bleed air from the propulsion engine of said airplane or connectable via an overrunning clutch 18 to said

16:39:17 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:39:28

U.S. Patent & Trademark Office

P0031

4,514,976

May 7, 1985

L7: 1 of 2

Integrated auxiliary power and environmental control unit

prime mover, a controlled emission turbine 24 which is shaft-coupled to said compressor 22 and cooperating with said compressor to form an environmental control unit, and means for diverting a portion of the output of said compressor for use as an auxiliary power unit.

1 Claims, 3 Drawing Figures

4,503,666

Mar. 12, 1985

L7: 2 of 2

Aircraft environmental control system with auxiliary power output

INVENTOR: William J. Christoff, Thousand Oaks, CA

ASSIGNEE: Rockwell International Corporation, El Segundo, CA (U.S. corp.)

16:39:28 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:39:37

U.S. Patent & Trademark Office

P0032

4,503,666

Mar. 12, 1985

L7: 2 of 2

Aircraft environmental control system with auxiliary power output

APPL-NO: 6/494,824

DATE FILED: May 16, 1983

INT-CL: [3] F02C 6\*08

US-CL-ISSUED: 60\*39.07, 39.183

US-CL-CURRENT: 60\*39.07, 39.183

SEARCH-FLD: 60\*39.07, 39.142, 39.183, 39.33; 62\*323.4, D16.5; 98\*1.5

REF-CITED:

U.S. PATENT DOCUMENTS

2,618,470	11/1952	Brown et al.	60*39.07
2,772,621	12/1956	Arnoldi	60*39.07
2,777,301	1/1957	Kuhn	60*39.07
3,965,673	6/1976	Friedrich	60*39.142

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30 JUL 87 16:39:47

U.S. Patent & Trademark Office

P0033

4,091,613 5/1978 Young

60\*39.07

PRIM-EXMR: Louis J. Casaregola

LEGAL-REP: H. Fredrick Hamann, Harry B. Field

## ABSTRACT:

An environmental control system for a jet aircraft has a single compressor coupled to a cooling turbine and an auxiliary power turbine. The compressor provides air to both turbines. Air to the power turbine is mixed with fuel to form combustion gases to drive the turbine. Air to the cooling turbine is cooled by expansion and used for air conditioning the aircraft cabin. The auxiliary power turbine can be decoupled and the compressor driven by the cooling turbine, which is powered by bleed air from the main engine of the aircraft.

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30 JUL 87 16:40:00

U.S. Patent &amp; Trademark Office

P0034

4,503,666

Mar. 12, 1985

L7: 2 of 2

Aircraft environmental control system with auxiliary power output

8 Claims, 1 Drawing Figures

=&gt; e nestlerode/inv

E1 1 NESTLER, VOLKER/INV  
E2 1 NESTLER, WALTER/INV  
E3 0 NESTLERODE/INV  
E4 5 NESTON/INV  
E5 1 NESTON, CORSHAM, WILTSHIRE/INV  
E6 1 NESTON, WIRRAL/INV  
E7 20 NESTOR, CHARLES R./INV  
E8 2 NESTOR, DAVID WILLIAM/INV  
E9 11 NESTOR, JACK/INV

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30 JUL 87 16:40:27

U.S. Patent &amp; Trademark Office

P0035

E10 10 NESTOR, JOHN J./INV  
E11 1 NESTOR, JOHN M./INV  
E12 5 NESTOR, JR., JOHN J./INV

=&gt; e johanson/inv

E1 2 JOHANSING, JR., P. G./INV  
E2 1 JOHANSING, JR., PAUL G./INV  
E3 0 JOHANSON/INV  
E4 1 JOHANSON, BENGT INGEMAR/INV  
E5 1 JOHANSON, CARL E./INV  
E6 1 JOHANSON, DAVID C./INV  
E7 1 JOHANSON, DECEASED, JOHN E./INV  
E8 5 JOHANSON, DONALD L./INV  
E9 1 JOHANSON, EDWARD E./INV  
E10 2 JOHANSON, EDWARD W./INV  
E11 7 JOHANSON, EDWIN S./INV

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30 JUL 87 16:40:48

U.S. Patent &amp; Trademark Office

P0036

E12 1 JOHANSON, FREDRICK R./INV

=&gt; e

E13 1 JOHANSON, JAMES G./INV  
E14 3 JOHANSON, JERRY R./INV  
E15 5 JOHANSON, JOHN E./INV  
E16 1 JOHANSON, LARS/INV  
E17 1 JOHANSON, LEONARD T./INV  
E18 1 JOHANSON, LLOYD A./INV  
E19 2 JOHANSON, NORMAN E./INV  
E20 1 JOHANSON, PETER A./INV  
E21 1 JOHANSON, RALPH E./INV

E23 1 JOHANSON, ROY W./INV  
E24 1 JOHANSON, SANDRA L./INV

16:40:51 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:41:01

U.S. Patent & Trademark Office

P0037

=> s e13

L8 1 "JOHANSON, JAMES G."/INV

=> d 18 fro

4,379,718

Apr. 12, 1983

L8: 1 of 1

Process for separating solid particulates from a melt

INVENTOR: LeRoy F. Grantham, Calabasas, CA

James G. Johanson, Malibu Lake, CA

ASSIGNEE: Rockwell International Corporation, El Segundo, CA (U.S. corp.)

APPL-NO: 6/264,496

DATE FILED: May 18, 1981

INT-CL: [3] C22B 21\*00

US-CL-ISSUED: 75\*24, 63, 68R, 93R, 93AC; 423\*466, 491

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30 JUL 87 16:41:22

U.S. Patent & Trademark Office

P0038

4,379,718

Apr. 12, 1983

L8: 1 of 1

Process for separating solid particulates from a melt

US-CL-CURRENT: 75\*24, 63, 68R, 93AC, 93R; 426\*466, 491

SEARCH-FLD: 75\*24, 68R, 63, 93R, 93AC; 423\*466, 491

REF-CITED:

U.S. PATENT DOCUMENTS

811,522	1/1906	Seaman	75*24
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3,694,190	9/1972	Langston	75*68R
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30 JUL 87 16:41:41

U.S. Patent & Trademark Office

P0039

4,379,718

Apr. 12, 1983

L8: 1 of 1

Process for separating solid particulates from a melt

FOREIGN PATENT DOCUMENTS

416401 6/1974 U. S. S. R. 266\*235

PRIM-EXMR: M. J. Andrews

LEGAL-REP: Clark E. DeLarvin, Henry Kolin, H. Fredrick Hamann

ABSTRACT:

A process for treating a metal recovery byproduct which contains solid ash constituents entrained in a melt comprising a major amount of a molten salt and a minor amount of molten metal in which the melt is filtered through a high-temperature filter apparatus containing a cylindrical rotating filter element to separately and continuously recover a filter cake containing the solid ash constituents and a molten filtrate containing the molten salt and

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U.S. Patent & Trademark Office

P0040

4,379,718

Apr. 12, 1983

L8: 1 of 1

Process for separating solid particulates from a melt

molten metal. This molten filtrate may be directly recycled to the metal

recover the salt therefrom for recycle to the metal recovery process. The invention is particularly applicable to the recovery of aluminum from its dross while removing ecologically damaging materials present in the ash.

9 Claims, 2 Drawing Figures

=> d 15 1-30

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P0044

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30 JUL 87 16:43:09

U.S. Patent & Trademark Office

P0045

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30 JUL 87 16:43:26

U.S. Patent & Trademark Office

P0046

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P0047

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=> d 15 4 fro

4,617,796

Oct. 21, 1986

L5: 4 of 30

INVENTOR: Janet S. Knapp, Simi Valley, CA  
Jerry L. Hillman, Langlois, OR  
ASSIGNEE: Rockwell International Corporation, El Segundo, CA (U.S.  
corp.)

APPL-NO: 6/713,209

DATE FILED: Mar. 18, 1985

INT-CL: [4] F02K 7\*06

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30 JUL 87 16:44:54 U.S. Patent & Trademark Office

P0048

4,617,796

Oct. 21, 1986

L5: 4 of 30

Sleeve valve for a pulsed gas generator

US-CL-ISSUED: 60\*39.79, 247

US-CL-CURRENT: 60\*39.79, 247

SEARCH-FLD: 60\*233, 39.76, 39.77, 39.78, 39.79, 39.8, 39.81, 247, 248,  
249, 221, 222

REF-CITED:

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3,279,178	10/1966	Kemenczky	60*221
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PRIM-EXMR: Louis J. Casaregola

LEGAL-REP: H. Fredrick Hamann, Harry B. Field, Lawrence N. Ginsberg

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30 JUL 87 16:45:05 U.S. Patent & Trademark Office

P0049

4,617,796

Oct. 21, 1986

L5: 4 of 30

Sleeve valve for a pulsed gas generator

ABSTRACT:

The combination of a pulsed rocket engine 12 and a sleeve valve 10 coupled to the engine output and receiving in its internal chamber 16 the gas generated by the engine 12. The sleeve valve 10 has a movable sleeve 24 with ports 26, 28 therethrough surrounding the wall 18 of the chamber 16, the wall 18 having ports 38, 40 which axially align with the sleeve ports 26, 28 in the valve's open position to allow rapid discharge of the contents of the chamber 16. The sleeve is ordinarily biased to a closed, or non-aligned, position for the ports by a spring 32. When the gas pressure in the chamber 16 reaches a predetermined amount, a pressure sensor 54 commands a gas source to send pressurized gas into the valve 10 to force the sleeve 24 into its open position against the bias of the spring 32, thereby aligning the ports 26, 28

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30 JUL 87 16:46:17 U.S. Patent & Trademark Office

P0050

4,617,796

Oct. 21, 1986

L5: 4 of 30

Sleeve valve for a pulsed gas generator

and 38, 40 and allowing rapid discharge of the gas from the sleeve-valve chamber 16.

6 Claims, 1 Drawing Figures

=> d 16 1-2 fro

4,653,032 [IMAGE AVAILABLE] Mar. 24, 1987

L6: 1 of 24

Arrangement for the determination of the direction and/or distance of objects by means of water-borne sound waves

INVENTOR: Hans D. Schwarz, Am Querkamp 58, Bremen, Federal Republic of  
Germany

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4,653,032 [IMAGE AVAILABLE] Mar. 24, 1987 L6: 1 of 24  
Arrangement for the determination of the direction and/or distance of objects  
by means of water-borne sound waves

Werner Thomsen, Seestr. 25, Flon/Holstein, Federal Republic of  
Germany

APPL-NO: 4/866,434  
DATE FILED: Oct. 10, 1969  
INT-CL: [4] G01S 7\*62; G01S 15\*06  
US-CL-ISSUED: 367\*113  
US-CL-CURRENT: ~~367\*113~~  
SEARCH-FLD: 340\*3R, 5R, 6R; 114\*20-24; 367\*99, 113  
REF-CITED:

U.S. PATENT DOCUMENTS

3,148,651 9/1964 Ray 114\*21  
16:47:17 COPY AND CLEAR PAGE, PLEASE  
30 JUL 87 16:47:26 U.S. Patent & Trademark Office P0052

4,653,032 [IMAGE AVAILABLE] Mar. 24, 1987 L6: 1 of 24  
Arrangement for the determination of the direction and/or distance of objects  
by means of water-borne sound waves

3,419,845 12/1968 Thiede et al. 340\*3  
PRIM-EXMR: Richard A. Farley  
LEGAL-REP: Wolf, Greenfield & Sacks

ABSTRACT:

The system is for determining the direction and/or distance of objects and, especially of watercrafts, by means of water-borne sound waves transmitted from the ship to a torpedo, for example. The system includes a cathode ray tube located on the ship for displaying sectors of interest, at least one storage means at the torpedo for storage and delivery of sound location data and being connected to a length of wire for transmitting stored location data over the wire to the ship, a controllable threshold discriminator connected

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30 JUL 87 16:47:30 U.S. Patent & Trademark Office P0053

4,653,032 [IMAGE AVAILABLE] Mar. 24, 1987 L6: 1 of 24  
Arrangement for the determination of the direction and/or distance of objects  
by means of water-borne sound waves

to the storage means, and means for limiting the frequency bandwidth of data signals transmitted over the communication wire to an order of magnitude of 500 Hz.

16 Claims, 2 Drawing Figures

4,574,632 Mar. 11, 1986 L6: 2 of 24  
Method for generating high frequency high level noise fields using low  
frequency excitation of aeroacoustic noise

INVENTOR: John H. Woolley, Ottawa, Canada  
Robert Westley, Kanata, Canada

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30 JUL 87 16:47:46 U.S. Patent & Trademark Office P0054

4,574,632 Mar. 11, 1986 L6: 2 of 24  
Method for generating high frequency high level noise fields using low  
frequency excitation of aeroacoustic noise

Carl P. Swail, Ottawa, Canada  
ASSIGNEE: Canadian Patents and Development Limited-Societe Canadienne  
des Brevets et d'Exploitation Limitee, Ontario, Canada  
(foreign corp.)

APPL-NO: 6/660,425

INT-CL: [4] G01N 29\*00

US-CL-ISSUED: 73\*571; 331\*155; 116\*137R

US-CL-CURRENT: 73\*571; 116\*137R; ~~181\*159~~; 331\*155

SEARCH-FLD: 73\*571; 331\*78, 155; 181\*159, 160, 182; 116\*137R

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30 JUL 87 16:47:57 U.S. Patent & Trademark Office

P0055

4,574,632

Mar. 11, 1986

L6: 2 of 24

Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise

# REF-CITED:

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30 JUL 87 16:48:07 U.S. Patent & Trademark Office

P0056

4,574,632

Mar. 11, 1986

L6: 2 of 24

Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise

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30 JUL 87 16:48:16 U.S. Patent & Trademark Office

P0057

4,574,632

Mar. 11, 1986

L6: 2 of 24

Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise

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PRIM-EXMR: Howard A. Birmiel

LEGAL-REP: Wenderoth, Lind & Ponack

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30 JUL 87 16:48:27 U.S. Patent & Trademark Office

P0058

4,574,632

Mar. 11, 1986

L6: 2 of 24

Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise



ABSTRACT:

There is described a system for producing noise particularly for sonic testing of an article, such as a satellite, in a reverberation chamber. In one of its aspects the system comprises a low frequency high-level broad-band noise source; a tube means including a section formed as an acoustic horn connected at its small end to the low frequency source and at its large end to the chamber. A Hartmann-type air acoustic high level noise generator, or generators are located inside the tube at a predetermined position. In operation the generator is excited by the generated low frequency noise to provide an output of non-linearly modulated noise. Also described is a Hartmann-type noise generator which comprises a nozzle and an aligned

16:48:27 COPY AND CLEAR PAGE, PLEASE

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U.S. Patent & Trademark Office

P0059

4,574,632

Mar. 11, 1986

L6: 2 of 24

Method for generating high frequency high level noise fields using low frequency excitation of aeroacoustic noise

acoustic tube spaced therefrom by an air gap. A reverberation cup is formed in the mouth of the tube facing the nozzle and a bridge member extends between the nozzle and tube and spans the air gap. Means is provided for varying the depth of the reverberation cup and for adjusting the size of the gap if desired.

23 Claims, 10 Drawing Figures

=> d 16 6,9,10 fro

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U.S. Patent & Trademark Office

P0060

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983

L6: 6 of 24

Undersea weapon with hydropulse system and periodical seawater admission

INVENTOR:

Allen C. Hagelberg, Diamond Bar, CA  
Clark E. Allardt, Claremont, CA  
Walter A. Lobitz, Westwood, CA  
Robert O. Thornburg, Blue Jay, CA  
George F. Zimmerman, Diamond Bar, CA  
Gary L. Letterman, Alta Loma, CA  
John W. Helbron, Upland, CA

ASSIGNEE:

General Dynamics, Pomona Division, Pomona, CA (U.S. corp.)

APPL-NO:

6/126,782

DATE FILED:

Mar. 3, 1980

INT-CL:

[3] F42B 19\*00

US-CL-ISSUED: 114\*20A, 25; 367\*133

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U.S. Patent & Trademark Office

P0061

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983

L6: 6 of 24

Undersea weapon with hydropulse system and periodical seawater admission

US-CL-CURRENT: 114\*20.2, 25; ~~367\*96~~, ~~133~~

SEARCH-FLD: 114\*20A, 25; 367\*131-135

REF-CITED:

U.S. PATENT DOCUMENTS

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2,714,800	8/1955	Gongwer	60*221
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2,938,481	5/1960	Maxwell et al.	
2,971,325	2/1961	Gongwer	60*221 X

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U.S. Patent & Trademark Office

P0062

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983 L6: 6 of 24  
Undersea weapon with hydropulse system and periodical seawater admission

3,000,306	9/1961	Wenzel et al.	60*245 X
3,060,682	10/1962	Kemenczky	60*221 X
3,079,753	3/1963	Gongwer	60*227
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3,154,041	10/1964	McKinnon	114*25 X
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30 JUL 87 16:50:43 U.S. Patent & Trademark Office P0063

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983 L6: 6 of 24  
Undersea weapon with hydropulse system and periodical seawater admission

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3,738,270	6/1973	Hargett et al.	102*7
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3,872,665	3/1975	Jarry	60*221
3,875,552	4/1975	Hogman et al.	114*25 X
3,914,935	10/1975	Burkes, Jr.	60*250 X
3,951,094	4/1976	Jastrom	60*221 X
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30 JUL 87 16:50:58 U.S. Patent & Trademark Office P0064

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983 L6: 6 of 24  
Undersea weapon with hydropulse system and periodical seawater admission

PRIM-EXMR: Peter A. Nelson  
LEGAL-REP: Henry M. Bissell, Edward B. Johnson

ABSTRACT:

An undersea weapon comprising a warhead, a **rocket** motor, detection, homing and control systems and a hydropulse underwater propulsion system in an integral unit. The weapon is launched at a previously detected target, such as a submarine, on a ballistic trajectory through the air by means of the **rocket** motor. The weapon enters the water near the submarine, which is thereafter detected by an on-board system incorporating active and/or passive detection. The thus-determined submarine direction is utilized by the control system to guide the weapon toward the submarine under water. A hydropulse motor utilizes the empty **rocket** motor as the propulsion

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30 JUL 87 16:51:16 U.S. Patent & Trademark Office P0065

4,372,239 [IMAGE AVAILABLE] Feb. 8, 1983 L6: 6 of 24  
Undersea weapon with hydropulse system and periodical seawater admission

chamber and provides the underwater propulsion to propel the weapon through the water toward the submarine, where the warhead then detonates on contact with the submarine. Alternatively, the weapon may be air dropped near a previously detected target, in which case there need be no propellant in the **rocket** motor. The hydropulse motor operates by repeatedly filling the chamber with water and expelling the water at high velocity through a

pulses, the detection system monitors the submarine free of noise from the on-board propulsion motor.

25 Claims, 9 Drawing Figures

16:51:16 COPY AND CLEAR PAGE, PLEASE

30 JUL 87 16:51:37

U.S. Patent & Trademark Office

P0066

4,319,660

Mar. 16, 1982

L6: 9 of 24

Mechanical noise suppressor for small **rocket** motors

INVENTOR: Charles R. Bishop, Arab, AL

ASSIGNEE: The United States of America as represented by the Secretary of the Army, Washington, DC (U.S. govt.)

APPL-NO: 6/183,604

DATE FILED: Sep. 2, 1980

INT-CL: [3] F01N 1\*24

US-CL-ISSUED: 181\*222, 258

US-CL-CURRENT: **181\*222, 258**

SEARCH-FLD: 181\*222, 223, 247-248, 252, 256-258; 60\*254, 264; 239\*265.15, 265.19

REF-CITED:

U.S. PATENT DOCUMENTS

1,127,250 2/1915 Humm

181\*223

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30 JUL 87 16:51:45

U.S. Patent & Trademark Office

P0067

4,319,660

Mar. 16, 1982

L6: 9 of 24

Mechanical noise suppressor for small **rocket** motors

1,554,534 9/1925 Straussler

181\*258

2,855,068 10/1958 Chapel

181\*252

3,521,429 7/1970 Leffler

181\*256 X

FOREIGN PATENT DOCUMENTS

2232559 1/1974 Federal Republic of Germany

181\*257

PRIM-EXMR: L. T. Hix

ASST-EXMR: Thomas H. Tarcza

LEGAL-REP: Nathan Edelberg, Robert P. Gibson, Harold W. Hilton

ABSTRACT:

A noise suppressor for small **rocket** motors including a plurality of perforated metal cylinders disposed in concentric relation and secured to a

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U.S. Patent & Trademark Office

P0068

4,319,660

Mar. 16, 1982

L6: 9 of 24

Mechanical noise suppressor for small **rocket** motors

support plate. A noise suppression material is disposed in the chamber of each adjacent cylinder. Noise suppression material is also disposed in the center cylinder and is expelled by the **rocket** motor thrust. A collar on the support plate secures the motor to the suppressor.

4 Claims, 2 Drawing Figures

4,312,054 [IMAGE AVAILABLE]

Jan. 19, 1982

L6: 10 of 24

Acoustic beacons

INVENTOR: Bard Holand, Trondheim, Norway

ASSIGNEE: SINTEF (Selskapet for industriell og teknisk forskning ved NTH), Trondheim, Norway (foreign corp.)

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30 JUL 87 16:52:10

U.S. Patent & Trademark Office

P0069

4,312,054 [IMAGE AVAILABLE]

Jan. 19, 1982

L6: 10 of 24

Acoustic beacons

DATE FILED: Jul. 7, 1980  
INT-CL: [3] H04B 11\*00  
US-CL-ISSUED: 367\*134, 137, 142, 910  
US-CL-CURRENT: ~~367\*134~~, ~~137~~, ~~142~~, ~~910~~  
SEARCH-FLD: 367\*134, 137, 142, 910; 200\*61.04, DIG.5; 340\*850  
REF-CITED:

U.S. PATENT DOCUMENTS

3,038,143	6/1962	Dow	367*134
3,611,276	10/1971	Massa	367*134
3,686,656	8/1972	Richards	367*142
3,798,692	3/1974	Madeley	340*850 X

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30 JUL 87 16:52:22 U.S. Patent & Trademark Office

P0070

4,312,054 [IMAGE AVAILABLE] Jan. 19, 1982 L6: 10 of 24  
Acoustic beacons

PRIM-EXMR: Richard A. Farley

ABSTRACT:

Acoustic beacon for use at sea and having a pipe-shaped housing in the one end of which is space for a battery which drives a transmitter disposed coaxially around the housing at the other end where there is arranged a pressure switch covered by a membrane. The transmitter is switched on by the pressure switch when the pressure on the outside of the membrane exceeds a certain limit when the beacon falls in water.

2 Claims, 1 Drawing Figures

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30 JUL 87 16:53:07 U.S. Patent & Trademark Office

P0071

4,153,134 [IMAGE AVAILABLE] May 8, 1979 L6: 17 of 24  
Underwater seismic source

INVENTOR: Lien C. Yang, La Canada, CA  
ASSIGNEE: The United States of America as represented by the  
Administrator of the National Aeronautics and Space  
Administration, Washington, DC (U.S. govt.)

APPL-NO: 5/830,458

DATE FILED: Sep. 6, 1977

INT-CL: [2] G01V 1\*38

US-CL-ISSUED: 181\*120; 340\*12R; 181\*115

US-CL-CURRENT: ~~181\*120~~, ~~115~~; ~~367\*142~~

SEARCH-FLD: 181\*115, 118, 120; 340\*12R; 175\*1; 166\*299

REF-CITED:

U.S. PATENT DOCUMENTS

2,069,242	2/1937	Graham	340*12R
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30 JUL 87 16:53:20 U.S. Patent & Trademark Office

P0072

4,153,134 [IMAGE AVAILABLE] May 8, 1979 L6: 17 of 24  
Underwater seismic source

3,039,559	6/1962	Ellsworth	340*12R
3,176,787	4/1965	Roever	340*12R
3,444,953	5/1969	Cholet	181*115
3,588,801	6/1971	Leonard	181*115
3,620,327	11/1971	Savit	181*118
3,658,005	4/1972	Byrne	340*12R
3,740,708	6/1973	Phillips	181*120

FOREIGN PATENT DOCUMENTS

2300346	8/1976	France	181*120
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PRIM-EXMR: Howard A. Birmiel

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U.S. Patent & Trademark Office

P0073

4,153,134 [IMAGE AVAILABLE] May 8, 1979

L6: 17 of 24

Underwater seismic source

ABSTRACT:

Apparatus for generating a substantially oscillation-free seismic signal for use in underwater petroleum exploration, including a bag with walls that are flexible but substantially inelastic, and a pressured gas supply for rapidly expanding the bag to its fully expanded condition. The inelasticity of the bag permits the application of high pressure gas to rapidly expand it to full size, without requiring a venting mechanism to decrease the pressure as the bag approaches a predetermined size to avoid breaking of the bag.

5 Claims, 6 Drawing Figures

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U.S. Patent & Trademark Office

P0074

3,903,988 [IMAGE AVAILABLE] Sep. 9, 1975

L6: 24 of 24

~~Rocket~~ noise generator

INVENTOR:

Robert William Hermsen, Palo Alto, CA

Paul G. Willoughby, Santa Clara, CA

ASSIGNEE:

The United States of America as represented by the Secretary  
of the Navy, Washington, DC (U.S. govt.)

APPL-NO:

4/766,700

DATE FILED:

Oct. 11, 1968

INT-CL:

[2] G10K 10\*00

US-CL-ISSUED:

181\*142; 116\*137A

US-CL-CURRENT:

~~181\*142~~; 116\*137A

SEARCH-FLD:

116\*137A, 137; 181\*0.5J, 142, 159, 110, 118, 120, 39; 114\*20;  
60\*254, 35.6RS; 340\*3E, 7R

REF-CITED:

S

U.S. PATENT DOCUMENT

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30 JUL 87 16:53:46

U.S. Patent & Trademark Office

P0075

3,903,988 [IMAGE AVAILABLE] Sep. 9, 1975

L6: 24 of 24

~~Rocket~~ noise generator

3,326,467 6/1967 Fortman

116\*137

PRIM-EXMR:

Maynard R. Wilbur

ASST-EXMR:

T. M. Blum

LEGAL-REP:

Richard S. Sciascia, Don D. Doty

ABSTRACT:

A combination underwater ~~rocket~~-ultrasonic noise generator having variously configured and located slots disposed in the inside wall of the ~~rocket~~ driving exhaust nozzle.

16 Claims, 6 Drawing Figures

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